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AMPUTATION OF ROOTS

AS A RADICAL CURE IN CHRONIC ALVEOLAR ABSCESS:
IN PYORRHOEA ALVEOLARIS COMPLICATED
BY ALVEOLAR ABSCESS.

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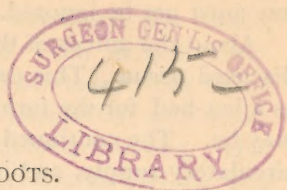
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AMPUTATION OF ROOTS.

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The removal of a portion or the whole of the root of a tooth has long been advocated by a few men of our profession, as a means of restoration to health of that class of teeth which do not yield to milder remedial treatment.

Like many other operations in oral surgery which naturally come within our sphere of practice, it seems to have received little or no attention from those who have made our literature; and text books are singularly silent concerning this important method of procedure.

In the majority of cases the operation is one presenting little difficulty. There are no dangerous anatomical points to be avoided except when working under the Antrum of Highmore or in the region of the mental foramen.

The instruments required are a sharp spear-shaped drill with which a hole is drilled through the process, passing through the root on a line with the canal. This is followed by a new fissure bur which worked laterally in both directions readily severs the end of the root.

Usually no anæsthetic is required. We must, however, occasionally resort to one where the operation is of considerable length and very painful. Under such circumstances a physician should be summoned who will administer an anæsthetic, leaving the dentist undisturbed in his surgical interference.

CHRONIC ALVEOLAR ABSCESS.

It is well known that the longer an alveolar abscess exists the greater the damage to the surrounding tissue. The injury that the

general system receives from the absorption of a certain amount of pus must not be ignored.

About the apices of the root is found an ever-enlarging zone of diseased tissue. This can well be called the apical space, and acts as a hot-bed for the formation of pus, ichorous or not, as the case may be. The continued effect of this is to denude the apex of all circulatory supply, and in time to bring about a necrotic condition of the root which gradually extends toward the crown of the tooth until eventually the entire root becomes necrosed. Treatment through the canal of the root for the cure of this disease is useless after necrosis has once attacked the apex. The operation of entering through the gum and burring the diseased tissue is uncertain in its results. Having filled the root or roots, the diseased portion is excised. This is at once followed by the vigorous use of the bur in the surrounding pathological tissue, and an immediate and radical cure is the result. All that is requisite is to see that the operation has been performed under true aseptic conditions, and that the parts are kept so until the wound has entirely healed.

CASE I. Mr. H., æt. about 30, presented in 1882 to have his mouth put in good order. A very long and firmly-embedded root was all that remained of the right superior cuspid. As far as could be ascertained the crown had been broken off for some years, and at intervals the root had given rise to considerable pain. There was no evidence of any abscess. Having thoroughly cleansed the canal, the apex was found to be open, and the root slightly absorbed around the edges. A 40 per cent solution of chloride of zinc was pumped through the apex, which was then sealed with chloro-percha one-third of the length of the root, and the remaining portion was filled with oxyphosphate of zinc.

Ten days later the patient returned, suffering severely from all the symptoms of alveolar abscess, except the swelling. The external parts appeared about normal, and it seemed impossible to bring about resolution. The temperature of the patient was now above 100° F., and a diagnosis was made of blind abscess, with slight septicæmia. The patient was at once put on tonic and antipyretic treatment, and it was determined to amputate the end of the root.

Chloroform having been administered, an incision was made in the gum over the apex of the root and a piece of tissue about three-eighths of an inch square was removed. A spear-shaped drill was then passed through the process and with a new fissure-bur one-

eighth of an inch of the apex was severed from the rest of the root. It was with great difficulty that this was removed, and not until a considerable portion of the alveolus had been drilled away. Attached to the root was a sac about half an inch long. The entire space was then thoroughly burred. It was washed out with a carbolized solution and allowed to heal under iodoform dressing. Had we our present knowledge of the various germicides, carbolic acid would have been discarded for something more efficacious. A crown was subsequently attached to the root and is doing good service to-day.

CASE II. Miss S—, aet. about 18, came in 1887 to have an alveolar abscess treated. A year previous she had the right superior first bicuspid filled by another dentist. Arsenic had been used to devitalize the pulp, and the roots and the crown were then filled. An alveolar abscess, having a fistulous opening on the buccal side, made its appearance within a few weeks and had been under treatment at least six months when I first saw her. The old fillings extending to the apices of the roots were removed and then renewed in order to be certain that the roots were properly filled.

The opening in the gum was then enlarged with a tent of cotton saturated with aromatic sulphuric acid; this was allowed to remain in position about four hours. On the return of the patient m. xx of a four per cent solution of cocaine hydrochlorate was injected into the gum on both the palatal and buccal sides. A small section of gum near the end of the root was then removed from the palatal side. By means of a spear-shaped drill, followed by a fissure bur, the end of the palatal root was amputated through the space made on the palatal side, and the buccal root was similarly operated upon through the opening on the buccal side. The two fragments were easily removed. The entire apical space was thoroughly drilled and sprayed with a solution of bichloride of mercury in hydrogen peroxide. Two iodoform tents were placed in position, one in each opening; they were reduced in size each day until the wound had entirely healed.

CASE III. Miss A—, aet. about 20, presented herself in 1888 to consult about the superior right cuspid. The tooth was pulpless, had a large posterior approximate filling which had been inserted four years previously in Vienna. An alveolar abscess had made its appearance soon after. Her dentist had drilled a small opening leading to the pulp canal above the neck of the tooth, in order to

give vent to the mephitic gases. The abscess had certainly become chronic, as a fistula on the labial side some distance below the apex of the root was constantly discharging pus.

After removing the filling the canal was found filled with the remains of the pulp, which, with the exception of some few shreds, was in a watery condition. The apex was found to be so badly absorbed that amputation was decided upon. The canals were first thoroughly filled. A hypodermic injection of m. xx of a four per cent solution of cocaine hydrochlorate was then administered. The diameter of the fistula was considerably enlarged and the upper one-fifth of the root amputated. It became, however, a very difficult matter to remove the diseased portion. After drilling away a large amount of the alveolus it was still impossible to remove the end of the root. It was then decided to anaesthetize the patient, and as she was somewhat exhausted she was dismissed, after placing in the wound a tent of cotton saturated with aromatic sulphuric acid, and she was ordered quinae sulphas gr. ij every three hours. On the following day chloroform was administered and the cavity had to be considerably enlarged by drilling when the end of the root was finally removed. These wounds all heal rapidly when the seat of the trouble has been removed and there should be no fear of making a large opening, especially when it has been necessary to resort to anæsthesia. In this case the density of the socket around a very long and tapering root rendered a very large opening imperative.

The wound healed rapidly under aseptic treatment and all that indicates the presence of the operation to-day is a very slight thickening of the alveolar plate at that point.

The record of these few cases is sufficient to indicate the absolute cure which follows this operation in chronic alveolar abscess and when it is compared with the uncertainty of every other method it is not unreasonable to ask: Why is it not performed more frequently?

PYORRHOEA ALVEOLARIS COMPLICATED WITH ALVEOLAR ABSCESS.

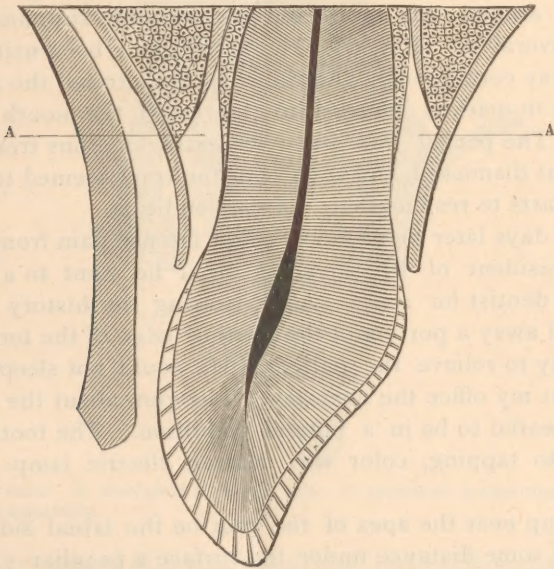
One of the worst conditions that we meet with in the various aspects of pyorrhœa alveolaris is where through the ravages of the disease, death of the pulp has ensued and there is added to the original septic matter the pus from the broken-down pulp. This condition generally takes place without any warning to the patient;

in fact it is impossible to learn at what time death of the pulp took place.

The powerful nature of the double septic condition soon causes absorption of the end of the root to progress more or less rapidly so that the purulent matter finds a free escape from the root and passes out through the channel furnished by the pyorrhœa pocket.

Consequently the diagnosis of such a pulpless tooth becomes a very difficult matter. The color remains good, even the electric mouth lamp generally fails to indicate that the pulp is dead,

FIG. 1.



A, pyorrhœal pocket.

because the canal is filled with purulent matter of such a watery consistency that it is rendered as translucent as though traversed by a living pulp. The only reliable diagnostic sign is to isolate the tooth by means of the rubber dam, and then to apply intense cold or heat. The smallest amount of the spray of chloride of methyl is admirably adapted for this purpose. We have all experienced the hopelessness of treatment of such teeth and a course of procedure which will enable us to preserve them for useful service may perchance be welcomed by the profession.

CASE IV.—Mr. P——, aet. about 36, came under treatment for pyorrhœa alveolaris in April, 1889. The disease was the sequence of an attack of African fever contracted during the first Stanley expedition. The history of the case is given on page 745, vol. x of the International Dental Journal. Though appearing hopeless at first sight, a thorough physical examination showed the organs to be in a healthy condition and a favorable prognosis was made. Treatment produced such marvellous results that in July I reported the case cured.

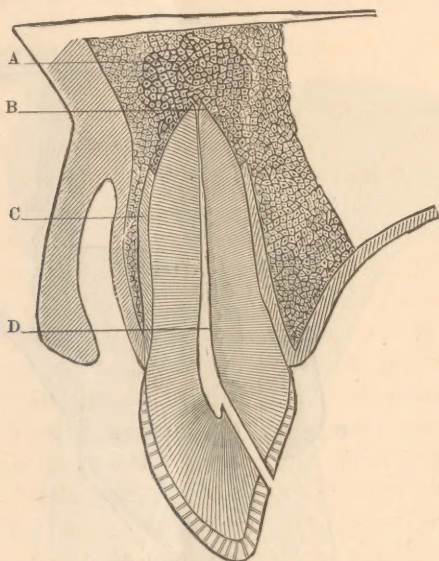
In December I saw the patient again and everything was normal except the superior right central incisor. The pocket had reappeared around this tooth and considerable suppurative action was discoverable. (Fig. 1.) The patient had been using an antiseptic spray continuously and the condition around the neck of the tooth was in marked contrast to the rest of the mouth which was normal. The pocket was given an extra vigorous treatment and the patient dismissed, and soon after the tract seemed to disappear and the parts to resume their normal condition.

A few days later he began to suffer intense pain from the tooth. Being a resident of Brooklyn, at night he went to a prominent Brooklyn dentist for relief. After hearing the history of the case he ground away a portion of the cutting edge of the tooth, hoping in this way to relieve the patient. He could not sleep that night and was at my office the next day. The gum about the neck of the tooth appeared to be in a normal condition. The tooth was very sensitive to tapping, color was normal, electric lamp showed no opacity.

High up near the apex of the root on the labial side could be discerned some distance under the surface a peculiar yellow spot, having an angry look about it. An incision was immediately made to this point, which at once allowed an exit for pus and at the same time brought relief to the patient. This space led directly to the root of the tooth, which was discovered to be considerably absorbed and surrounded by soft, carious tissue. It was of course impossible for the pulp to be alive. The rubber dam was adjusted and an opening drilled through the palatal surface into the pulp chamber. This was discovered filled with pus of a watery consistency, with some shreds of pulp tissue still existing. The canal was thoroughly cleansed with a solution of mercuric bichloride in hydrogen peroxide, the syringing of which caused the medicament to come

through the labial opening. The aperture at the end of the root was very large. The root was then filled with gutta-percha and covered with oxyphosphate of zinc. (Fig. 2.) The opening into the labial side was packed with a tent of cotton soaked in aromatic sulphuric acid. Tonic treatment was prescribed and an appointment made for the following day. At that time no alveolar process

FIG, 2.



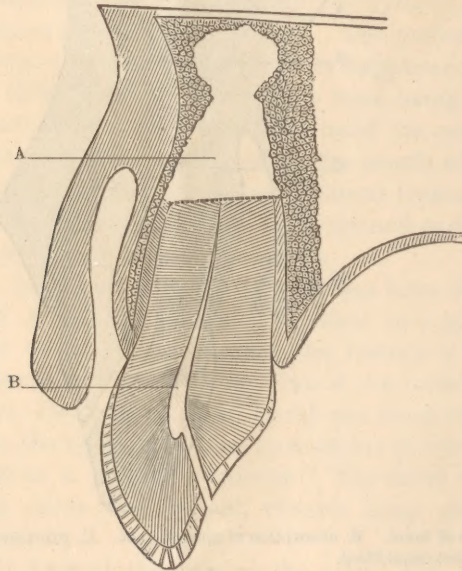
A, caries of bone. B, absorption at apex of root. C, pyorrhœal pocket filled in with new tissue. D, root canal filled.

interfering, by means of a fissure-bur the upper one-quarter of the root was amputated and removed. The surrounding tissue was found to be carious up to the floor of the nose. The patient being somewhat exhausted another tent was placed in the wound and two days after he was anæsthetized and a large portion of the incisive fossa burred away. (Fig. 3.) The wound was thoroughly ascepticised and lightly packed with iodoform lint and patient directed to use a listerine spray every two hours. He was also put on a tonic of albuminate of iron mixed with the compound syrup of hypophosphite of lime. The dressing was removed every day, being replaced by a smaller one each time. The operation was so severe that it was three weeks before the parts were healed, the

patient being confined to his house for the first week. The result has been satisfactory in every way.

CASE V. Mr. T——, æt. about 53, of vigorous and healthy constitution. He had always taken fair care of his teeth, none of which had been lost. The deposit of salivary calculus had always been dense and rapid in its formation, necessitating very frequent attention to the removal of the same. Having somewhat neglected his

FIG. 3.



A, bone and portion of root removed. B, root canal filled.

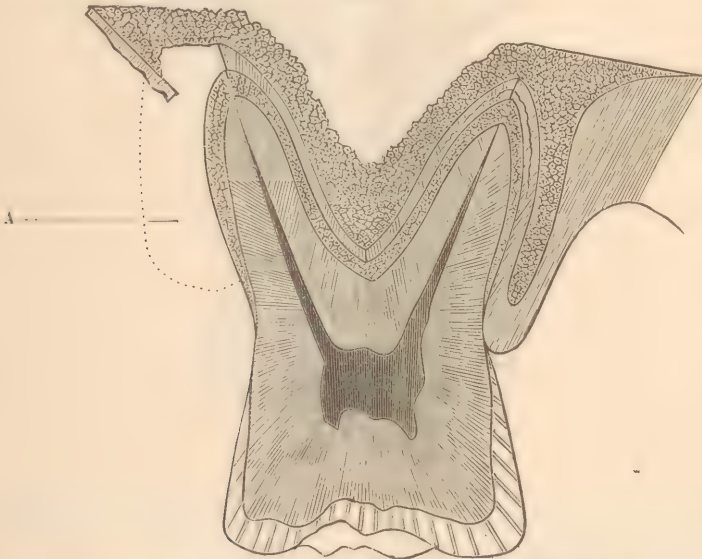
mouth he presented himself in 1889 for treatment. There was an extensive deposit of salivary calculus ; on removing which it became evident that the work of his previous dentist in removing the same had been very superficial. There was considerable tumefaction of the gum and a discharge of pus. Local treatment restored his mouth very speedily to a condition of health with the exception of the superior left first molar.

The palatine root of this tooth was entirely denuded of any covering on its palatal aspect down to the very point of the apex, its nerve connection having long since been severed. No filling

had ever been inserted in the tooth and there was no sign of caries. (Fig. 4.) The rubber dam having been adjusted, a hole was drilled through the centre of the crown, and the pulp, which was found in a very putrescent state, thoroughly removed from the three roots. They were then cleaned and filled as previously described and a permanent filling inserted over the oxyphosphate to close the opening in the crown.

A fine fissure bur was then passed through the palatine root

FIG. 4.



A, entire loss of covering over palatal aspect of palatal root.

close to the crown and the entire root removed. At the point of amputation another permanent filling was inserted. (Fig. 5.)

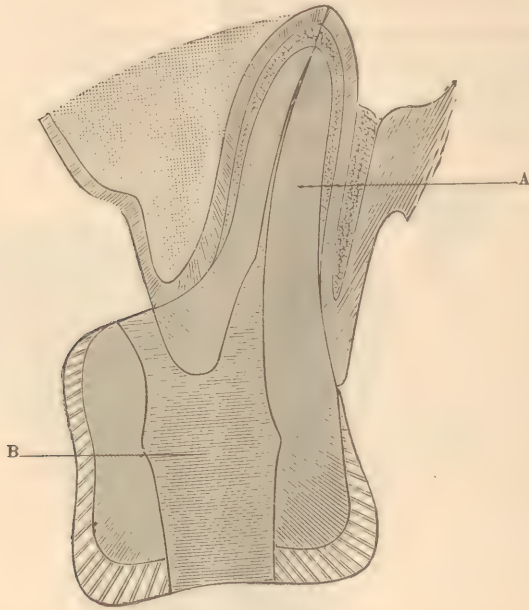
Two weeks later the gum on the palatal side was in a healthy condition, all traces of the imprint of the root had disappeared and the tooth which had been very loose was now firm in its socket supported by the two buccal roots.

This is the most common class of teeth that we meet in which amputation of the roots is indicated. Not only do we restore to usefulness a loose tooth but we stop the absorption of a certain amount of purulent matter.

To briefly summarize: Wherever death of any portion of a root has taken place, the simplest cure is to amputate the necrosed

portion of the root and the tissue will close firmly about the remaining healthy portion, which will suffice to support the tooth. In

FIG. 5.



A, buccal root. B, filling.

teeth of more than one root, where often an entire root becomes necrosed, this may be safely amputated and the tooth generally be well supported by the remaining root or roots.

